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ABSTRACT

This report describes the background, history, development and evaluation of distance education in Sweden since its inception in 1973. A preliminary general section describes higher education and external studies in Sweden, the basic ideas behind distance education, and its scope and general organization in Sweden. Part of the preparation for the 1977 reform of higher education, the experimental activities described were designed to test different methods of teaching students who could come to an educational institution for only short periods of time. Scope, organization, and the different components of the evaluation program are described. Results presented relate to students' goals and study alternatives; background and study effort; general attitudes toward distance education; distance bridging aids; study results (achievement); and teachers' experiences with distance education. A follow-up investigation is also described, and strategies for strengthening student-teacher contact in distance education are examined in a concluding discussion. Appended are a nine-page reference list, and lists of additional reports on distance education (23 in Swedish and 17 in English). (LMM)

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# STRATEGIES FOR STRENGTHENING STUDENT-TEACHER CONTACT IN DISTANCE EDUCATION : RESULTS OF AN EVALUATION OF DISTANCE EDUCATION IN SWEDISH UNIVERSITIES

by

Birgitta Willén

The Open University
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January 1984

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## 1. Higher education and external studies in Sweden

Work on the reform of higher education in Sweden began in the 1960s as part of a radical reorganization of the entire education system. In recent years, an important educational goal in Sweden has been to increase the accessibility of higher education, making recurrent education available even to employed adults living out of reach of the university towns (U68 1969a, b, 1970a,bc, UKÄ 1974). Part-time evening classes, decentralized university education and distance education are some of the means of achieving this goal.

New university entrance requirements have been gradually introduced (Kim 1978, Kim & Simon 1978). These allow adults over the age of 25 who have been employed for at least 4 years to study certain subjects at the university even though they do not fulfil the formal requirments (SFS 1969:68, 1976:231).

Higher education in Sweden is divided into undergraduate studies and post-graduate studies and reseach. At the undergraduate level students can choose between general study programmes and separate courses. On successful completion of a general study programme, which usually has a vocational basis, a degree or certificate is awarded. Separate courses are mostly single subject studies, whose purpose is either to further training or general education.

The duration and extent of these courses of study are expressed by a system of points. One term of full-time studies corresponds to twenty points, which means that one week of full-time studies with lectures, assignments (practical work, exercises) and independent study is usually worth one point. The courses of study are designated A, B, C or D, with A representing the first term of study in a subject (0-20 points), B the second term of study (20-40 points), and so on. A basic university degree usually consists of 120 points.

Everyone who applies for entrance to a general programme or a separate course must satisfy both general and special entrance requirements. The special entrance requirements are expressed in terms of Swedish secondary school courses. However, these qualifications do not guarantee admission. Since the reform in 1977 all courses of study have a limited number of places. This means that when there are more applicants than the number of available places, a selection must be made on the basis of the applicants' qualifications.

Both the applicants' school results and their experience of working life are taken into consideration (Kim 1978). The same conditions applied to distance courses even before 1977, since the number of places was limited due to the experimental activities which were taking place.

Universities and colleges offer a large number of separate courses; the University of Stockholm, for example, offers more than 600 (University of Stockholm 1976). Many such courses are simply fundamental courses in traditional university subjects. Apart from the fee payable to the Students' Union, all studies at universities and colleges are free.

Since the reform of the university in 1977, the collective term for all education at university and college level is "higher education". Thus the new higher education system includes not only traditional university studies, but also other post-secondary studies (SOU 1973:2, 1973:3, Dahllöf 1977, Prop 1975:9, 1976/77:59, Premfors & Östergren 1978). The widest range of courses is offered by the six universities situated in Gothenburg, Linköping, Lund, Stockholm, Umeå and Uppsala (see Figure 1). In addition there are now more than 20 other towns with institutes of higher education, which do not, however, have research or post-graduate studies.

The experimental activities involving distance education took place before the 1977 reform of higher education. They were part of the preparations for this reform, in spite of being organized within the framework of the old university faculty system.

I will give a very brief description of the situation which pertained during the evaluation of the experimental activities with distance education. The administrative body for basic university training consisted of the four faculties with their sub-divisions, and only within this framework was it possible to receive a university education. During this period, distance education was organized by the Faculty of Arts and Sciences. The term Faculty of Arts and Sciences is here used to denote the faculties of Liberal Arts, Social Sciences and Natural Sciences. The overall responsibility for distance education was held by UKÄ (the Office of the Chancellor of the Universities) up to 1977, when it was decentralized and placed in the hands of six Regional Boards.

Students, especially distance students, probably felt only a marginal effect of the change-over between the old and the new systems. The points system had already been introduced into the Faculty of Arts and Sciences in connection with the PUKAS reform (UKAS 1968). Previously, admissions to

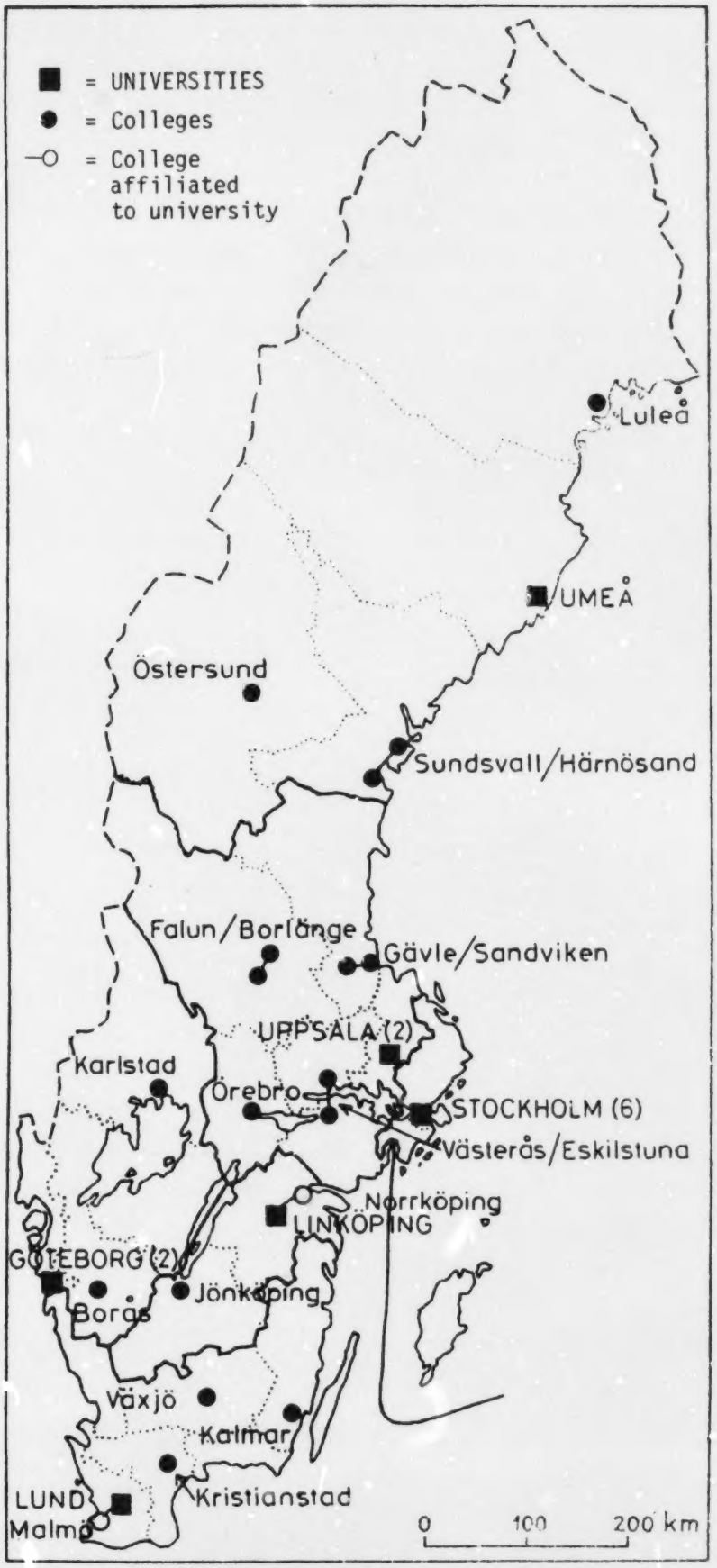


Figure 1. Regions of higher education, universities and colleges in Sweden 1977. (Source: Willén 1981, p.18, Fig.1.1)

the majority of subjects in the Faculty of Arts and Sciences were not restricted, whereas distance education has been restricted for the entire experimental period, even tnough the enrolment procedure was much simpler than it is now.

It should be noted that the term "university studies" below denotes studies, usually within the Faculty of Arts and Sciences, which are organized by the six universities or their branches. The picture becomes more complicated in the follow-up investigation, as it covers a period before and after the reform and necessitates the use of both the term "university" and "higher education".

## 2. The basic ideas behind distance education

Distance education at the Swedish universities began in the academic year 1973-74. Before experimental activities were commenced, certain guidelines were issued by UKÄ (1973):

> "The exact form of the experimental activities will depend on the particular provisions that can be made by the participating educational establishments and institutions. It is, however, possible to give some general indications as to how the intended experimental activities may be planned and organized. These include:
>
> - a drastic reduction in the amount of oral teaching (compared with traditional university teaching)
> - a concentration of oral teaching to shorter, clearly defined, periods
> - that particpants will mainly pursue their studies individually at home
> - that one or more methods will be tested to bridge the physical distance between students and teacher (during periods without oral teaching)
> - that the educational establishments assume the responsibility for organizing and implementing instruction". (UKÄ 1973, p.1)

Perhaps I should point out that the institutions involved had different motives for beginning distance education and for beginning two other projects proposed by U68. These motives have changed from time to time. When U68 first proposed the experimental activity in 1968, it was important in order to relieve the pressure on the universities caused by a large increase in the intake of students during previous years (SCB 1974a, b) and the ensuing problems. When distance education started in 1973, the situation had been reversed. The intake of students had decreased rapidly and many departments had enormous problems with surplus capacity (UKÄ 1970, 1971, 1972). One of the burning questions became how to recruit new groups of students. It is possible that distance education would not have met with the same

enthusiasm on the part of the departments had the problem of declining student numbers not existed.

While the experimental activities with distance education in Sweden were under way, the Committee for Television and Radio in Education (TRU Committee) was given the task of proposing general models for the organization of distance education in Sweden. A special working-group was appointed which after reviewing international experience put forward a number of a number of models with varying degrees of central administration (SOU 1975:72). Dahllöf (1976, 1977; Dahllöf & Willén 1981) has pointed out that the description of the international scene given by the working group is characterized by an obvious information bias in favour of a system based on radio and television. The working group of the TRU Committee, however, did not express itself in favour of any particular one of the suggested models.

## 3. The scope and general organization of distance education

The main pedagogical idea behind the experimental activities with distance education was to test different methods of teaching students who could only come to an educational establishment for short periods of time. It was a question of finding pedagogical methods which permit instruction and studies to function at a distance from the university. The universities were intended to implement distance education and were individually responsible for subject content and for the planning of courses, as well as for creating and using special methods for distance education.

The general design of the distance programmes during the period of the experimental activities can be summarized in the following way:

Although the basic model may be said to come close to traditional correspondence education, it should be emphasized :

- that the programmes are mainly based on self-study as in traditional university studies in general,
- that the same text-books are used as in ordinary university courses,
- that the same examinations are held as for ordinary university courses both as regards form and content.

As in correspondence education, supplementary materials are used mainly in the form of:

- written study guides commenting upon text-books
- assignments to be sent in to the university at regular intervals.

The following special aids play an important role in bridging the distance and in increasing teacher-student contact:

- meeting at the university at least three times per course during the two terms
- audio-cassettes (video-cassettes have seldom been used)
- telephone service.

The telephone service enables students to make brief calls to the teacher or tutor at particular times on certain days of the week. The teacher then calls back at the expense of the university. The Swedish method is unique in the considerable extent of its use of the telephone as a distance bridging aid. The Swedish model is much more decentralized than the UK Open University and does not make use of radio and television broadcasting.

Distance education started in Autumn Term 1973 with 7 courses of study. A further 14 courses started during Spring Term 1974. During the 1982 academic year there were around 250 courses in operation, with around 10,000 distance students. The majority of subjects represented in the experimental activities are from the Faculty of Social Science or the Faculty of Arts. All courses are intended for part-time students. Financial support was forthcoming from the standard grant system for those subjects for which permission had been obtained for representation in the 1972-1977 experimental activities. This meant that distance education had more or less the same economic resources as traditional university education.

## 4. The scope and organization of the evaluation programme

Distance education and the evaluation of the experimental activities commenced simultaneously. The first stage of the evaluation programme was carried out by the Department of Educational Development at Umeå University, which also was responsible for planning and implementing distance education at the University. Thus, at the start the evaluation programme was more in the nature of a survey than a research project. The work schedule allowed no time for advanced studies of relevant literature so that the evaluation could be put on a sound theoretical basis. However, in the course of the programme, it became incorporated into the so-called UPPÅT-project (the Uppsala project on recurrent education) at the Department of Education at Uppsala University (see Dahllöf & Westin 1977, Dahllof & Löfgren & Willén 1979). A common characteristic of the evaluators and the teachers who worked with distance education during these early years was that both groups had relatively little knowledge and experience in this area.

My aim has been to present as comprehensive a picture as possible of the evaluation by attempting to cover a number of different aspects of the experimental activities which were considered to be important. The evaluators' point of departure assumes a basic view of education as an open system with important links to the surrounding society. This point of view has characterized much of the educational research carried out since the end of the 1960s and stems from the models described in the KOMPASS-project (see Dahllöf 1967). The models concerned the comprehensive school but may very well be applied to an analysis of the university situation (see Elgqvist-Saltzman 1976).

The evaluation devotes much space to an analysis of factors such as students' background, study problems, the use of students make of distance bridging aids and their attitudes to them, study results, and the social and psychological consequences of distance education. The data has been collected mainly by questionnaires supplemented by interviews, telephone calls and registration forms. The main part of the evaluation consists of a panel investigation of distance students who began their studies in the academic year 1974-75. The panel group consists of students who, according to their own judgement and that of their teachers, had been active during the entire period of the study. They have also answered both questionnnaires (see Figure 3). The panel group is essentially representative of the larger groups which have answered one or other of the questionnaires. The work and attitudes of the teachers are also studied, in order to see whether distance education involves changes in workload compared with traditional teaching.

The variables in the panel study can be grouped according to the paradigm shown in Figure 2.

| General background | Motives and goals | Frame conditions | Study processes | Outcomes |
|---|---|---|---|---|
| Sex | General education | Job situation | Actual amount of time spent on studies | Passrates |
| Age | Do present job better | Home situation | Use of aids | General satisfaction |
| Basic education | Change of occupation | Planned time for studies | Support in studies | Attitudes towards aids and system |
| | | | Collaboration | |

Figure 2. Paradigm of the variables on the panel study. (Source: Willén 1981, p.23, Fig. 1.2)

Frame conditions are those parts of the immediate environment which may be subject to change, but which most often act as relatively fixed limits within which the task must be performed. The term was coined in connection with a study of ability grouping in secondary schools (Dahllöf 1967, Lundgren 1972).

I will briefly mention here the importance of seeing this type of evaluation in relation to society in general, i.e., of taking into consideration environmental factors and frame factors which may be of importance for the evaluation.

The panel study was conducted amongst students participating in the distance courses which started during academic year 1974-75. Questionnaires were distributed in connection with the first residential school at the beginning of the first semester. Another questionnaire was sent out at the end of the seconde semester. The questionnaires together cover background data, work situation, study motives, planned and actual amount of time for studies, study breaks and other problems, use of special teaching aids, and attitudes towards different components in the teaching programme. The response rates to the questionnaires in the panel study were 81.4 and 81.6 per cent respectively. When correction is made for people who had been accepted but never started, the figures rise somewhat. The response rate of the distance teachers was 92 per cent.

The evaluation programme also included some special studies (see Figure 3). The reason for carrying out these particular studies was that administrators and planners had a direct need for specific information in order to improve their planning of future activities.

One of these studies was an evaluation of the radio programme "Distance minutes", broadcast from Umeå during academic year 1973-74 in cooperation with the TRU Committee (Willén 1975a). Another special study concerned a group of people who made enquiries about distance education at Umeå University, but who did not enrol. The aim of the investigation was to find out why those who had asked for information failed to enrol (Willén 1975b).

A special investigation was made of distance education and other university education in the northern educational region (Tengling & Willén 1975). Following directly on this report, the geographical aspects of recruitment to distance education have been studied in relation to the dissemination of information and to the subjects offered (Willén 1976).

In addition, a course in communication technique organized by Umeå University in cooperation with the Swedish Trade Union Confederation was described and analysed. This was an 8-point course presented through distance study. (Willén 1975c). This experimental activity is one example of commissioned education, which may very well be one of the functions of the university in the future (UKÄ 1975).

In Figure 3 I have tried to give a comprehensive picture of the various components of the evaluation programme. Once again I must underline the importance of taking into consideration particular factors which may be crucial to the evaluation. In the testing of a new form of education, numerous areas and interested parties can be the object of study. From my point of view, the most essential task was to glean information from studients who had participated in distance education, which could be used to modify and improve future courses. In order to do this it was necessary to study the opinions and attitudes of different student groups. An educational innovation such as distance education also makes new demands on administrators and, above all, on teachers. It is therefore important to weigh the opinions of the one group against those of the other.

My line of action was to collect information from several sources about the organization of distance studies, the frame situation and the study process, and to examine it through different methods. For example, teachers and students independently answered questions about the special distance bridging aids that were used. Teachers were asked to give a detailed account of their planning for distance courses and were subsequently asked how the course actually turned out.

The fact that the evaluation took place during the early days of distance education naturally had both positive and negative effects on the results. Among the positive effects can be reckoned the "beginners" motivation of teachers and students and the selection of students who previously had not had a chance to participate in higher education. Still another positive factor was the restricted number of participants per course. One of the negative factors was the short time the participating departments had at their disposal for planning. Nor did teachers have the opportunity of special training in distance and/or correspondence teaching. The production of teaching material suitable for distance education had to take place during the actual course and without the help and support of experienced colleagues. It is, of course, difficult to predict the effect of all these factors on the results of the evaluation. It may even be that positive and negative factors counter-balance each other to some extent.

| Investigated group/source of information | Method of investigation. Main variables |
|---|---|
| University administration | A. Information to the general public<br>B. Entrance requirements. Principles<br>C. Home town of the applicants who have not been accepted and of the distance students |
| Departments | A. Interview with the head teacher<br>Planning. Choice of teachers. Method. Examination<br>B. Drop-outs<br>C. Use of telephone (5 departments in Umeå)<br>Registration of telephone calls.<br>D. Questionnaire after one year of distance teaching.<br>Use of different distance bridging aids. Attitudes. Use of different examination forms. Opinion of distance teaching and distance students. Pedagogical effects on traditional teaching.<br>E. Interview with head teacher<br>Students' study results |
| Those who asked for information but did not enrol (Umeå) | A. Telephone interview/Questionnaire<br>Background data including educational background and place of abode. Opinion of distance studies. Reason for not registering. Do they intend to begin distance studies later? Which people began distance studies later? |
| Applicants who were not accepted | A. Questionnaire to the university administration<br>Background data including place of abode and previous education |
| Distance students | A. Questionnaire at the beginning of distance studies.<br>Background data. Motive for studying. Professional and work situation. Family situation. Support from enviroment. Amount of time intended to be spent on studies.<br>B. Interview with distance students (pilot study)<br>C. Questionnaire upon completion of studies<br>Motive for studying. Actual amount of time spent on studies. Obstacles in the way of studies. Use of and attitude to distance bridging aids. Attitude to examination and teaching aids. General opinion of distance education. |
| Special investigations | A. Distance education and other extra-mural university education in the northern region.<br>B. Cooperation with the Swedish Trade Union Confederation's school in Brunnsvik<br>C. Evaluation of the radio-programme "Distance minutes" broadcast from Umeå in cooperation with the TRU Committee |
| Follow-up investigation five years after the commencement of studies | Questionnaire to distance students regarding<br>a) attitude to distance studies<br>b) occupational situation during the five-year period<br>c) educational situation during the five-year period |

Figure 3. Schematized overview of the components in the evaluation of distance education. Source: Willén 1981, p.25, Fig. 1.3

The follow-up investigation, five years after the commencement of studies, takes up aspects which were not included in the preliminary planning of the evaluation project. The investigation was initiated within the framework of the UPPÅT-project, which sought solutions to problems within the area of recurrent education.

In Table 1 I have presented distance courses available in the academic year 1974-75 according to subject group.

Table 1. Available distance courses 1974-75 presented according to subject group

| Language subjects (L) | Arts subjects (A) | Administrative subjects within the Social Sciences (Ad) | Social Sciences (S) | Economic subjects (E) | Natural Sciences (N) |
|---|---|---|---|---|---|
| English A1 (3) | History A1 (2) | Labour market and personnel administration A1 (2) | Education A3 8p (2) | History of Economics A1 | Physics A1 (2) |
| English B1 (3) | History of ideas and learning A1 | Public administration A1 (2) | Education A1 | Economics (2) | Physics A3 |
| German A1 | History of Art A1 | Marketing and consumer policy (A1 | Sociology A1 | Statistics (2) | Computer Science 10p A5/A6 |
| General Linguistics 10p | | Introductory course in Law 10p | Educational technology | Business Administration 10p (2) | Mathematics A1 (2) |
| Swedish A5 | | Community planning A7 | | | Geotechnology A1 |
| | | Political Science A1 | | | Biology A1 10p |
| Total : 9 | 4 | 8 | 5 | 7 | 8 |

Source: Willén 1981, p.37, Table 2.2

5. The students' goals and study alternatives

Motives for studying were various and often interrelated. A good proportion of those who said that they studied for occupational reasons also said they were interested in increasing their general knowledge (Table 2).

Let us examine the relationships between the selected subgroups. Those with a lower level educational background, the relatively younger students and those taking administrative subjects have some kind of occupational change in mind to a greater extent than the other groups. Occupational change is here a combination of three response alternatives, covering "entire training programme for an occupation", "change to another occupation" and "promotion within present type of occupation". It should be noted that there are considerable motivational variations from group to group, with general education universally occupying a prominent position. There is also a tendency for older participants to place greater emphasis upon 'doing the present job better'.

Most of the students intended to take only single subjects. Only 25 per cent of students intended or were considering taking the full degree course when they started their studies. This group comprised mainly younger students, students with only secondary school education and those reading administrative and economic subjects. Half of the students were confident of success with their studies, men more so than women and younger students more so than older ones.

Table 2. The students' goals and study alternatives. Per cent within each sub-group.

| Variables | Total | Study field [1] L | A | Educational background Low [2] | Teachers | Age 25-34 | 45- |
|---|---|---|---|---|---|---|---|
| Motives: | | | | | | | |
| Occupational change | 59 | 53 | 81 | 73 | 36 | 67 | 35 |
| Do present work better | 34 | 28 | 41 | 36 | 39 | 28 | 46 |
| General education | 54 | 56 | 45 | 55 | 63 | 53 | 57 |
| Goals: | | | | | | | |
| Only single subject | 61 | 63 | 55 | 60 | 60 | 57 | 70 |
| Study attitude: | | | | | | | |
| Expect to succeed with studies | 49 | 44 | 42 | 47 | 39 | 52 | 43 |
| No study alternatives if distance education had not existed | 59 | 62 | 61 | 35 | 68 | 59 | 63 |
| N | 797 | 201 | 147 | 167 | 146 | 336 | 166 |

1) See Table 1 p. 11.
2) Low = lower than secondary

Almost two thirds of the students did not think they would have had any chance of studying if it had not been for the distance courses. When the students were divided up according to educational background, students with higher education were more often found to answer that without distance education they would have had no chance to study. A possible explanation is that people with higher education are more likely to be interested in subjects which can be studied at the university and less in subjects offered by the educational associations or municipal adult education.

Among students who said that they had other alternatives, 8 per cent would have applied for decentralized university education, 14 per cent would have studied at one of the educational associations which organize university circles, 11 per cent would have gone in for correspondence studies and 12 per cent would have chosen municipal adult education. I would like to point out that if one looks at the regional distribution of courses available through the educational associations and decentralized university education, it is obvious that only students living in larger towns and cities have the opportunity of alternative study forms. An intensive study of this problem was carried out within the framework of this project (Tengling & Willén 1975).

6. Background, frame situation and study effort

The parents of most distance students had only compulsory schooling (Table 3). The parents of male students more frequently had less education than those of female students.

The majority of distance students were married or cohabiting and over half of them had children. There were more men than women amongst the 78% of distance students who were in employment. Of those reading languages, most of whom were women, comparatively few were employed. The largest number of employed students was found in the administrative and natural science subject areas, where men were in a large majority. Nine out of ten employed distance students were satisfied with their current occupation.

At the commencement of studies, half of the distance students, more women than men, planned to spend at least 10 hours a week on their studies. The more highly educated the students were, the less time they intended to devote to studies (Table 4). On completion of the course, when they were asked how much time they had spent on studies, only 34 per cent reported that they had spent 10 or more hours per week. Two thirds of the students

Table 3. Background, frame situation and study effort for distance students. Per cent within each sub-group.

| Variables | Total | Study field L | Study field A | Educational background Low | Educational background Teachers | Age 25-34 | Age 45- |
|---|---|---|---|---|---|---|---|
| Background | | | | | | | |
| Father: compulsory school only | 63 | 61 | 65 | 68 | 58 | 62 | 60 |
| Married or cohabiting | - | 81 | 68 | 81 | 82 | 74 | 83 |
| Frame conditions: | | | | | | | |
| Job parallel to studies | 78 | | 86 | 77 | 90 | 73 | 84 |
| - of which full time | 87 | 7 | 98 | 83 | 92 | - | - |
| Periodic breaks | 64 | 70 | 65 | 62 | - | - | - |
| N | 797 | 201 | 147 | 167 | 146 | 336 | 166 |

Table 4. Hours per week invested in studies. Per cent.

| Group | More than 10 hours per week planned | actual | N |
|---|---|---|---|
| Total | 50 | 34 | 797 |
| Sex | | | |
| Male | 47 | 30 | 448 |
| Female | 53 | 39 | 349 |
| Educational background | | | |
| No secondary school | 57 | 45 | |
| Secondary school | 55 | 34 | |
| Teacher | 49 | 39 | |
| University | 35 | 22 | |

Source: Willén 1981, p. 103, Table 6.13.

had been forced to make one or more study breaks during the course (due to much over-time work, illness in family, etc).

I have also tried to describe the students' total situation, which I think is very important in understanding the study process and the study results. Through contact with adult students we could see clearly how factors in the immediate environment can either hinder or encourage professional work and studies. In Table 5 I have analysed the material according to the variables age and sex, to see if there were any differences between men and women in the various age groups (see e.g. Deem 1980a, b, Huston-Stein & Higgins-Trenk 1978, Westman-Berg 1979). The women between 25 and 40 years of age were employed outside the home far less often than men. This is undoubtedly because women of this age often stay at home to take care of the children. The findings of our investigation strongly support this interpretation (see also McIntosh 1978).

A marked increase in the professional activity of women was seen first after the age of 45. Age variations in realtion to professional activity were almost non-existent for male students, with the exception of the group under 25 years of age. Among the employed students, almost all the ment worked full-time, while a quarter of the women worked part-time. I should also mention that a large number of the women worked as teachers, which means that their scheduled working hours were fewer than those of most other people in full-time employment. A consequence of this was that women in all age groups spent much more time than men on housework. Of the male students, those between 25 and 35 years of age spent most time on housework. Because of the nature of my material I cannot obtain clear proof that the women in the investigation devoted more time to their children and families than did the men, but there were stron indications that this was the case. Considerably fewer women than men were able to study without interruption during the period in question, which agrees with our previous hypothesis about the social role of women as regards the family. It appears that both men and women were strongly supported in their educational strivings by people in their environment, women under 45 years of age receiving more support than men from their parents. But as far as belief in one's own ability to succeed with studies went, men over 25 demonstrated far more self-confidence than women. Only 36 per cent of female students between 35 and 44 believed that they would succeed with their studies. Women over 35 also planned from the beginning to spend more time than men on their studies, although in no case did students manage to adhere to their plans.

Table 5. The students' total situation in relation to sex and age. Per cent.

| Situation | Age -24 | | 25-34 | | 35-44 | | 45- | | Total | |
|---|---|---|---|---|---|---|---|---|---|---|
| | M | F | M | F | M | F | M | F | M | F |
| Married or cohabiting | 9 | 33 | 73 | 78 | 89 | 84 | 88 | 73 | 78 | 78 |
| Have children who need looking after | 5 | 17 | 55 | 58 | 79 | 84 | 53 | 33 | 59 | 60 |
| Parents positive to studies | 82 | 100 | 63 | 74 | 49 | 57 | 33 | 16 | 48 | 53 |
| Husband/wife positive to studies | 23 | 67 | 72 | 75 | 77 | 76 | 79 | 72 | 65 | 69 |
| Employed | 55 | 50 | 86 | 57 | 98 | 62 | 92 | 74 | 89 | 63 |
| Full-time | 83 | 67 | 96 | 75 | 95 | 75 | 96 | 67 | 95 | 73 |
| Part-time | - | - | 1 | 25 | 1 | 25 | 2 | 24 | 5 | 27 |
| Housewife/husband | - | 17 | 1 | 28 | - | 24 | - | 10 | - | 22 |
| Anticipate succeeding with studies | 50 | 67 | 60 | 42 | 56 | 36 | 47 | 40 | 56 | 40 |
| Plan to study more than 10 hours/week | 55 | 67 | 46 | 49 | 47 | 55 | 50 | 65 | 47 | 53 |
| Actually studies 10 hours/week | 24 | - | 26 | 32 | 33 | 46 | 43 | 56 | 55 | 41 |
| Have studied without a break | 20 | - | 18 | 9 | 25 | 12 | 30 | 16 | 23 | 11 |
| Have had no parallel studies | 71 | 67 | 70 | 72 | 72 | 71 | 69 | 65 | 63 | 59 |
| Time spent on housework 5 hours or more/week | - | 67 | 11 | 58 | 5 | 53 | - | 29 | 6 | 50 |
| Time spent on housework 9 hours or more/week | - | - | 1 | 20 | - | 13 | - | - | - | 13 |
| N | 22 | 6 | 187 | 149 | 151 | 114 | 88 | 78 | 448 | 347 |



Source: Willén 1981, p. 106, Table 6.17.

## 7. General attitudes to distance education

In Table 6 we see that practically all the students were extremely satisfied with distance education as a study form. The difference between sub-groups is marginal. The table also tells us the number of students who considered that meetings were a valuable asset. Even on this point, two thirds of the students gave a positive answer. Students with a lower level educational background were somewhat more positive to meetings than those with teacher training or a university background.

Table 6. General attitude to distance education as a whole and to meetings. Per cent within each sub-group.

| Variables | Total | Study field L | A | N | Educational background Low | Teachers | Age 25-34 | 45- |
|---|---|---|---|---|---|---|---|---|
| Satisfied with distance education: | | | | | | | | |
| very satisfied + fairly satisfied | 90 | 91 | 92 | 88 | 92 | 89 | 87 | 90 |
| Meetings | | | | | | | | |
| Have been worthwhile | 77 | 75 | 80 | 83 | 82 | 72 | 74 | 82 |
| Number of times (M) | 4.6 | 3.3 | 3.0 | 5.7 | - | - | - | - |
| Number of days (M) | 13.2 | 14.4 | 7.8 | 18.0 | - | - | - | - |

The subject areas involved in distance education exhibit different patterns regarding the number and length of meetings, but there is nothing to suggest that any one particular model is preferable to the others. The students most positive to meetings were those studying natural science subjects. This is logical since these subjects include laboratory experiments which can be carried out only during meetings. The group which studied administrative subjects were also more positive to meetings than other groups. Even these subjects included a lot of practical work during the meetings at the university. We see that the groups which were most positive to meetings were also those most positive to distance education as a study form. A combination of methods including direct contact between student and teacher is found at a number of other schools. In an investigation of 33 European correspondence schools and the United Kingdom Open University, Bååth (1976) found that in 27 cases direct contact between student and teacher was built into the method of teaching.

Wångdahl (1977) studied a number of investigations and made an inventory of the instances of student-teacher contact and its significance for students. These investigations are extremely relevant for us, but unfortunately the majority of cases involve such a high percentage of drop-outs that the results are difficult to interpret and generalize from. However, we can conclude that the majority of students in these investigations experienced direct contact with the teacher as a positive factor.

## 8. Distance bridging aids

Table 7 shows how often the various distance bridging aids were used as well as which aids students would have liked to see used more. It is quite obvious that the aids used most often were written materials such as study guides to text-books, self-check assignments, returnable assignments and free standing study guides. The next most frequently used aid was the telephone and it is this aid which students would primarily have liked to see used more often in distance education. Approximately one third of the students would have liked an increase in the use of the other aids mentioned below as well as of the telephone and personal letters. These results should be seen in relation to the current use of these aids.

Not many students requested the increased use of technical aids such as the conference telephone or the telecopier. These two aids were used very little. Students with a lower level educational background more often

Table 7. Summary of main results concerning distance bridging aids Ranking order and per cent.

| | Use Rank | % | Increase Rank | % | N |
|---|---|---|---|---|---|
| Written study guides to textbooks | 1 | 84 | 3 | 27 | 111 |
| Self-check assignments | 2 | 76 | 6 | 24 | 100 |
| Assignments to be sent in | 3 | 73 | 7 | 23 | 96 |
| Study guides | 4 | 66 | 2 | 28 | 94 |
| Telephone | 5 | 62 | 1 | 32 | 94 |
| Study letters | 6 | 44 | 8 | 13 | 57 |
| Tape recorder | 7 | 36 | 5 | 25 | 61 |
| Personal letters | 8 | 32 | 4 | 26 | 58 |
| Conference telephone | 9 | 7 | 9 | 12 | 19 |
| Telecopier | 10 | 1 | 10 | 4 | 5 |

Source: Willén 1981, p. 115, Table 7.6.

tended to ask for increased use of the following aids: personal letters, telephone, conference telephone, printed study guides, printed study guides to text-books and tape-recorders. Women were found to favour more use of aids increasing the amount of personal contact between students and teachers. It was observed that the older the student, the greater the preference for taped lectures, whereas younger students wished for more printed study guides to text-books and more returnable assignments.

We shall now look at another question relating to the importance to students of the different distance teaching components (Table 8). Let me first say that the significant factor here is not the absolute size of the percentages, but the relations between the different components and the subgroups.

It is apparent that students regarded their most important needs as being connected with the variety of available subjects and not, as one might have expected, with the different methods and aids characterizing this form of education. The most frequently expressed request of the total group of students was for a greater variety of courses. Above all more 0-20 point courses are required, but more 20-40 point courses would also have been appreciated by many. The need for different courses typically and understandably differed between the educational groups. Those with less education requested principally more courses at the 0-20 point level while those with higher education would have liked to see more courses at a higher level. Forty-two per cent of students with prior university education wished for courses at the 40-60 point level.

The use of aids with a feedback effect was much in demand, as Kelly (1981a) and Kelly and Millard (1982) have also observed amongst Open University students. These aids include the telephone, letters and study-circles. Almost one third of the students also asked for more meetings, despite their already widespread use. Students studying natural science subjects were less likely to ask for more meetings, which can be explained by the fact that these subjects already made most use of meetings, both as regards number and length.

We know also that natural science students were extremely positive in their reactions to their meetings. This suggests that many students might find more frequent or longer meetings an advantage. Students with prior university experience were less likely to request longer meetings than those with different educational backgrounds.

Table 8. Factors judged to be important for the functioning of distance education in relation to sex, educational background and age. Per cent very important + important.

| Factor | Tot | | | Educational background | | | | Age | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | M | F | No sec. school | Sec. school | Teacher | Univ. | -24 | 25-34 | 35-44 | 45- |
| Greater variety of 20 point courses | 78 | 81 | 74 | 82 | 80 | 77 | 71 | 79 | 81 | 78 | 73 |
| More 40 point courses | 63 | 64 | 61 | 53 | 68 | 59 | 67 | 68 | 67 | 66 | 48 |
| More 60 point courses | 31 | 28 | 35 | 24 | 32 | 31 | 36 | 29 | 31 | 31 | 29 |
| Greater variety of short courses | 34 | 38 | 31 | 31 | 32 | 32 | 42 | 40 | 37 | 31 | 33 |
| Longer study period | 22 | 19 | 26 | 23 | 18 | 23 | 26 | 14 | 24 | 20 | 24 |
| Shorter study period | 10 | 10 | 10 | 7 | 13 | 10 | 9 | 18 | 11 | 10 | 6 |
| More meetings | 31 | 31 | 31 | 35 | 35 | 39 | 19 | 43 | 31 | 30 | 32 |
| Fewer meetings | 3 | 3 | 4 | 2 | 4 | 1 | 6 | - | 5 | 3 | 2 |
| Study circles | 36 | 34 | 40 | 40 | 36 | 39 | 33 | 46 | 38 | 34 | 34 |
| Visits from teacher | 8 | 9 | 7 | 14 | 8 | 6 | 5 | 7 | 9 | 8 | 6 |
| Postal contact | 48 | 46 | 50 | 51 | 53 | 47 | 41 | 50 | 49 | 50 | 41 |
| Telephone contact | 46 | 42 | 53 | 48 | 54 | 44 | 39 | 46 | 47 | 50 | 38 |
| Study technique | 43 | 42 | 46 | 57 | 47 | 46 | 27 | 39 | 43 | 41 | 48 |
| Study guidance | 43 | 37 | 61 | 53 | 52 | 39 | 28 | 64 | 48 | 41 | 33 |
| Taped lectures | 51 | 47 | 56 | 48 | 55 | 55 | 46 | 32 | 49 | 52 | 54 |
| Distance radio | 30 | 31 | 30 | 28 | 26 | 35 | 31 | 18 | 30 | 30 | 32 |
| Distance TV | 29 | 29 | 28 | 31 | 26 | 35 | 25 | 22 | 27 | 28 | 32 |
| N | 797 | 448 | 349 | 167 | 261 | 146 | 216 | 28 | 336 | 265 | 166 |

Source: Willén 1981, p. 119, Table 7.10.

Among the "feedback components", radio and TV were offered as alternatives. If we look at the aids which students requested, we see that they seldom asked for radio and TV, but preferred study circles, postal contact, telephone contact and taped lectures. These are interesting and noteworthy results, considering the recent discussions in Sweden and other countries on the importance of radio and TV in distance education (cf. SOU 1975:72 and Holmberg 1977). We must admit that the results of our investigation do not provide much support for this type of distance bridging aid.

From our interviews with a number of distance students, it emerged that radio and TV programmes were not popular because they were broadcast at set times and the majority of those following the courses were not free to watch or listen (cf. Brown 1979). Some students pointed out that it was uneconomical to use radio and TV programmes. If so much money was available it would be better used to improve written materials and to increase the number of taped lectures.

Additional aspects of distance education in Table 8 include study technique and study guidance. A total of 43 per cent of students considered that greater stress should be placed on these areas. Here students with a lower level educational background were in the majority. Women expressed a wish for increased study guidance twice as often as men, and the younger the students were the more they felt the necessity of study guidance. This is quite understandable as these two groups contained the largest number of unemployed students.

The students were largely satisfied with their teachers' performance during meetings. However, in some cases teachers were criticized, for example, for not teaching study technique and for not being able to give information about current research.

The above questions provide a good picture of how distance education functions and which aspects require improvement. The problem is that it will never be possible to create a single ideal distance model as so many factors influence the functioning of this form of education. Examples of these factors are the structure and content of the subject, as well as student characteristics such as educational background and age. We have seen that, in spite of a large measure of agreement between the sub-groups in our investigation, there are some groups, such as those with less education, which have special needs and wishes. When planning distance teaching it is important to take into consideration the requirements of particular target groups.

## 9. Study results

A number of investigations in the area of higher education, reviewed by Elgqvist-Saltzman (1976), have demonstrated the difficulty of measuring accurately the effectiveness of education from examination statistics, mainly because of the number of early drop-outs, many of which simply indicate that the student has been accepted for another, preferred course (cf. also Miller 1970, Black 1972, Dahllöf 1975, McIntosh and Woodley 1978, Coldeway & Spencer 1980). As regards distance education and single courses for older students, one could argue that the number of alternatives are limited, but it must be remembered that university circles organized by the educational associations may be a serious alternative and it is not always clear at the beginning of a term whether or not these will be able to take place. Statistics of those studying at a slower rate have been analysed to a much lesser degree than statistics of full time students. The gross pass rate figures for the latter are usually relatively low and a clear picture of results is obtained only through an intensive analysis of all available information. In this investigation, I have assumed that there is no reason to have greater expectations of distance education than of any other form of higher education that is conducted at a slower pace and addressed to working adults. In general, results from previous investigations in the Faculty of Arts show that 50 per cent or more of those who actively pursue studies complete them within the alloted time. Our problem is that we have no adequate basis of comparison.

The examination results of the distance students were remarkably good. Sixty-five per cent of the panel group had completed their studies successfully after three terms (Table 9). The study results of the panel group were also analysed in relation to sex and educational background. The question of whether students who have never studied at university are able to cope with distance studies which require the ability to plan one's work and to take initiatives has often been discussed. In our investigation, however, it was quite obvious that in this respect there were no great overall differences between the educational groups (cf. McIntosh, Calder & Swift 1976). On the other hand, different areas of study produced varying results, although these results did not point in any one single direction. In four of the sub-groups, arts, administrative subjects, natural sciences and the 8-10 point courses, students with less previous education did better than those with a university background. The opposite applied to the sub-groups

Table 9. Examination pass rates after three terms for the panel group distributed according to sex and educational background. Per cent for each sub-group.

| Sex<br>Educational background | Subject area<br>Only 20 p courses<br>L | A | Ad | S | E | N | Tot. 20 p course | Tot. 8-10 p course | Tot. B-course | Tot. | N |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Male | 45 | 81 | 75 | 70 | 56 | 70 | 67 | 58 | 43 | 65 | 448 |
| Female | 56 | 96 | 75 | 57 | 63 | 74 | 67 | 63 | 59 | 66 | 348 |
| No sec. school | 50 | 87 | 75 | 64 | 42 | 88 | 66 | 69 | 20 | 65 | 167 |
| Sec. school | 55 | 67 | 76 | 69 | 49 | 65 | 62 | 51 | 86 | 62 | 261 |
| Teacher | 63 | 79 | 78 | 55 | 80 | 79 | 72 | 62 | 63 | 70 | 146 |
| University | 70 | 74 | 73 | 67 | 81 | 66 | 70 | 63 | 67 | 68 | 216 |
| N | 135 | 96 | 138 | 64 | 86 | 103 | 622 | 114 | 60 | 796 | |

Source: Willén 1981, p. 134, Table 8.3

languages, economics and social science subjects. Two explanations spring to mind. Firstly, success in the latter sub-groups may have been furthered by certain basic knowledge, and secondly there was a significant difference between the two sets of sub-groups in terms of motives for study. A pass with distinction was more common among those with previous experience of university studies than among those with less education. Students with previous experience of university also improved their study results from the second to the third term to a greater extent.

Courses which started in the Spring term showed better results than those which started in the Autumn term. It would seem that the summer vacation gave students the necessary extra time to catch up with what they had missed and to prepare for forthcoming studies. We also classified study results according to the location of studies, without finding any differences. Factors relating to individual subjects can probably explain some of the differences in examination results, as can factors concerning particular student groups and, as, above all, can the contribution and commitment of the teacher.

## 10. Teachers' experiences of distance education

A questionnaire was sent to teachers who had participated in the courses included in our evaluation. The response rate was extremely good (N=120). The teachers' views on the choice of suitable aids were in accord with those of the students. The telephone and written material were the aids most appreciated by both groups. Slightly fewer than half of the teachers felt the need for aids other than those which were available.

A quarter of the teachers thought that distance education would function better if assistance was given by, for example, Hermods, the educational associations, or other similar organizations. These teachers did not want help with the entire organization of the course, but only with certain aspects. They also pointed out that extra resources must be granted to allow for outside help. Almost half of the teachers considered that the contact with distance students was more frequent and more effective than contact with regular students. The positive telephone contact contributed to this (Table 10).

Table 10. Teachers' assessment of the contacts with the distance students. Per cent.

| | Total | Of which head teachers | Of which other teachers | Language L | Administration A | Natural sciences N |
|---|---|---|---|---|---|---|
| Explicitly better contacts than with other student groups | 47 | 64 | 40 | 71 | 50 | 20 |
| Good or as good contacts as in other cases | 31 | 24 | 33 | 16 | 32 | 40 |
| Less good contacts | 15 | 9 | 17 | 13 | 14 | 17 |
| Don't know or no answer | 7 | 3 | 10 | - | 4 | 23 |
| Total | 100 | 100 | 100 | 100 | 100 | 100 |
| N | 120 | 33 | 87 | 24 | 28 | 35 |

Source: Willén & Dahllöf 1979, p.43, Table 6

Distance education implied new tasks for teachers. The following changes were noted:

more supervision and more personal contact
changed working hours
greater production of teaching material
more administration
more planning

More than half of the teachers thought that distance education had a positive effect on conventional education in their institutions. Teaching aids specially produced for distance courses have even been useful on other courses, and distance education has stimulated pedagogical discussions in the departments. The many teachers (86%) who considered that distance education had a number of advantages mainly stressed that it gave the chance of education to people who previously had no opportunity to study. Among the 78 per cent who noted disadvantages, 34 per cent said that the contact between teacher and students was poor and 37 per cent said that distance education gave the department a lot of extra work and problems.

The teachers strongly supported the basic model of media and organization adopted in Sweden. About 85 per cent of the head teachers also responded that the new distance courses had affected the teaching situation in other courses in a positive way (Willén 1981, Tables 9:21-24) not only with respect to an improvement of the situation as to teaching materials (75%) but also in terms of an intensified pedagogical debate within the department (39%).

## 11. The follow-up investigation five years after the commencement of studies

The group studied in the follow-up investigation was the panel group. Those under 25 at the beginning of the distance courses were excluded, as this group was too small (N=32) to sub-divide. A further 51 students were excluded since data on their background was incomplete. Therefore the final group consisted of 714 people to whom a questionnaire was sent in May-June 1979. The questionnaire dealt with the following three areas:

- distance courses
- occupational situation during the previous five years
- educational situation during the previous five years.

The last-named area provides an interesting point of reference to the problem of recurrent education investigated by the UPPÅT-project. Despite the five year gap between the first investigation and the follow-up investigation, the response rate was as high as 85 per cent. In the initial investigation the study results were surprisingly good; sixty-five per cent of the panel group had completed their studies successfully after three terms. Five years after commencement of distance studies, the number of passes had risen from 65 per cent to 76 per cent, which proves that a number of students return to complete their studies after a long break.

Very few (10%) of the students said that distance studies had led to financial difficulties or problems at home or at work. There were no differences between the sub-groups. As many as 80 per cent would recommend distance education to a friend, only 1 per cent would advise against distance studies, and a third of the investigated group said that distance education had stimulated their interest for studies. Those who had not previously studied at university before the distance course more often showed an increased interest in studies than those with prior experience of an academic education. The older the student at the commencement of studies, the more likely it was that interest for studies increased.

A large proportion of the group (79%) answered an open question about what distance education had meant for them. Almost all of those who answered said that distance education had had a positive meaning for them. Only 5 per cent referred to negative experiences. There were considerable qualitative differences in the way the open question was answered. Female students wrote longer answers, were more forthcoming and analytical in their answers than male students. The answers of the women were also more often emotionally tinged. More than half of the answers to the open question dealt with the self-actualizing effects of distance education. Female students without prior experience of university studies were the most likely to give such answers.

In a separate analysis of those who said that distance education had led to increased self-esteem, it emerged that a considerably larger proportion of women (25%) than men (11%) had experienced this effect. More women than men said that their self-esteem had increased because they had succeeded with their studies. This was especially true for women without prior experience of academic studies. A third of the students emphasized the extreme suitability of the study form for those who are employed or who have children to look after and thus cannot participate in any other form of education (cf. also Dodds, Lawrence & Guiton). A smaller proportion (19%) answered that distance education had influenced their occupational situation positively, i.e. that some change had taken place in the area of work. This part of the questionnaire confirms the results of the previous evaluation, i.e. students' positive attitude towards distance education.

During the 1960s and 1970s, adult education in Sweden has expanded rapidly. Behind this expansion lie several political resolutions (Prop 1967:85, Prop 1975:23) partly based on the ideal of equality in the field of education. During recent years, the compulsory school system has been extended so that everyone now has a relatively long basic education. The investment in adult education is partly to provide older generations with the chance of educating themselves and supplementing the schooling they received as children. Swedish adult education may give an impression of confusion since a great variety of courses are offered and sponsored by different organizations.

I regard it as essential to study adult education activities from the standpoint of the individual's circumstances and over a long period of time. The results of my investigation show above all that the members of the investigated group were extremely flexible in their choice of type of

education and educational organization and that the educational situation was more complex than I had imagined.

As many as 80 per cent of the investigated students had participated in some type of education in addition to distance education during the five year period (Figure 4). Sixty-eight per cent had participated in university courses, while 55 per cent chose other educational alternatives of which the most frequent were in-company training, educational associations and trade union courses. Roughly one in three of the investigated group had participated both in a university course and in other training. The men tended to choose in-company training and trade union courses more than the women, whereas the reverse applied to courses run by the educaticnal associations and to municipal adult education. Those with a university education had more often particpated prior to the distance course in a course run by the educational associations than those without experience of university studies.

The majority of those who continued university studies after the distance course did so through separate part-time courses. More than half of these people succeeded in taking a further 20 points after the distance course. The results suggest that better coordination of the variety of education offered within a region should prove fruitful. This type of collaboration would probably result in a rich exchange of experiences between planners, teachers and students.

This brief presentation demonstrates how complex and fascinating recurrent education can be. There are numerous opportunities for those who wish to acquire more education. The final choice seems to depend on many factors such as the invidiual's age, motive for studying, previous educational background, family situation, self-esteem and occupational situation. Factors such as the availability, focus and organization of education will also affect the choice.

12. Strategies for strengthening student-teacher contact in distance education Concluding discussion.

The overall conclusion so far is that the decentralized Swedish model for distance education seems to have operated very successfully, but still needs to be strengthened with regard to feed-back functions such as meetings at the university, optional study groups and telephone contacts. Much remains to be done by the university regional boards, especially in planning a course programme which meets the needs of the target groups (cf. Dahllöf 1977, Dahllöf & Willén 1978b).

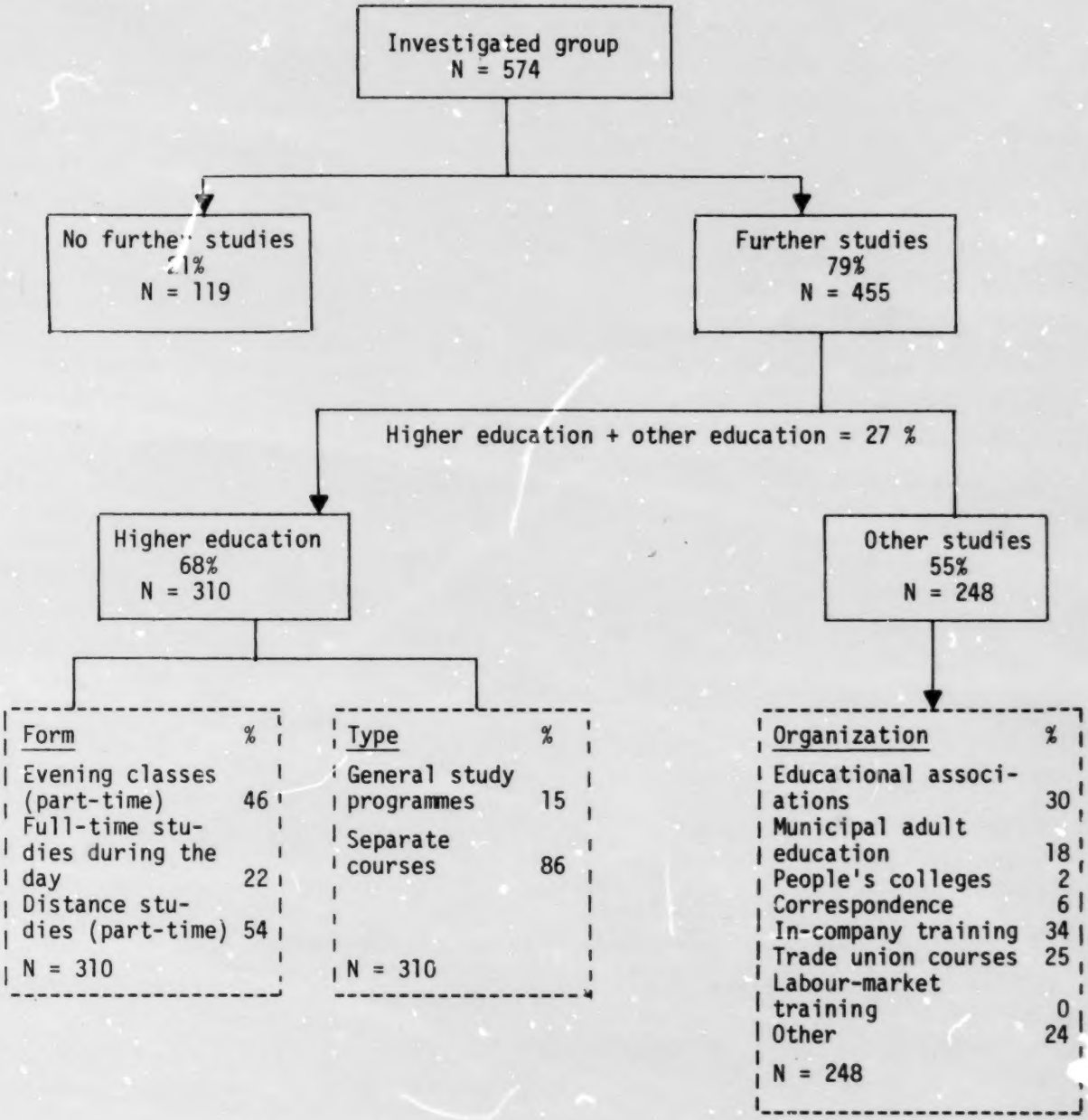


Figure 4. Educational activities of the investigated groups during a five-year period. Source: Willén 1981, p. 213, Figure 13.1.

The planning and implementation of distance teaching in higher education must naturally take into consideration:

- the official aims of the university
- the needs and situation of the intended target groups
- economic and organizational reality

I will briefly describe some of the aims of university education in Sweden, inlcuding the aims outlined in the Higher Education Act of 1977 (SFS 1977:218). The overall goals of education are of principal interest to this discussion; regulations concerning the organizing authority and other matters can be omitted. Paragraph 1 of the Act states that "education, research and developmental work shall be carried out within the area of higher education". In the next paragraph the goal for education is expressed in the words "higher education shall have a scientific basis".

Education is to be planned so that students acquire the knowledge and ability to judge various phenomena critically. Education should also prepare students for a future profession or enable them to further develop their skills in an existing profession. Knowledge and skills acquired through contact with working life and society should be utilized. All education should further the personal development of the individual. It should also further understanding of other countries and international conditions. It should be noted that the expression "acquire" used in connection with knowledge, skills and critical ability is used in order to underline the active participation of the student in the educational process (see Sandqvist-Örnberg 1977, p.17). These examples of overall goals can be supplemented by the specific objectives of each course.

As far as Swedish distance education is concerned the evaluation has provided relatively sound knowledge about the needs and situations of the investigated group of students. But a previous report has already stressed the importance of caution at this stage. "What seems to us a self-evident concentration on the needs and situation of the target group also gives rise to warning signals when it comes to utilizing empirical material from the Swedish investigations. Firstly, one must be aware of the differences between subjects and between subject groups, and only draw general conclusions when there is a firm basis of consistent results. Secondly, and most important, the conclusions must be based on the sub-group of students which corresponds closest to the target groups". (Dahllöf & Willén 1978b, p.4)

I would also like to emphasise the importance of noting meaningful differences between the sub-groups, especially when a systematic trend is apparent. (cf. Zelan & Gardner 1975, Chesson & MacDonald 1978, Cross 1978). In the current literature in this area, there is a tendency to characterise distance students as though they were a homogeneous group. To take the following example from Wångdahl (1980), "The discussion of various situational factors, carried on above, can be summarized in a rough outline of a typical correspondence student. Thus, the correspondence student is a man, 20-35 years old, and has a higher previous education than the rest of the population. He has full-time work, most often a white-collar job, he is married and he has often children living at home. He lives in an urban area, most often with more than 75,000 inhabitants" (ibid. p.14). Such descriptions do not help in the planning of distance education. On the contrary, they may have a negative effect (cf. Cross 1978). Such generalisations could perhaps be used in the planning of a smaller course, especially if the target group was a very specific one.

In the planning of Swedish distance education, special consideration has been given to those who are gainfully employed, have less prior education, are older and live comparatively far away from the nearest place offering the same course in a different form. The evaluation has shown that during the experimental period we have succeeded in recruiting students answering to all of these criteria, except the criterion of less previous education.

With regard to educational background the results are not quite so clear-cut. This is mainly due to the fact that the goals were not completely unambiguous in this respect. It was stated in an earlier study that "the goals concern not only distance education but higher education in general. Experimental activities according to the 25:5 rule, which was succeeded by the general quota for students applying under the 25:4 rule, naturally give us reason to reckon with a considerable number of students with less education than the three year secondary school, although nowhere are directives to be found saying how large a proportion of students this group should constitute (cf. even Kim 1978)" (Dahllöf & Willén 1978b, p.6). The discussion about students with a lower level educational background is further complicated by the fact that some of the subjects included in the experimental activities demanded special basic knowledge (Willén 1980a, 1980b). In the majority of industrialized countries, the discussion about students' educational background has reflected an aim to give other groups than the traditional ones the chance of a university education, It is still difficult to find a university which is satisfied with its efforts in this direction (see McIntosh & Woodley 1975, Chesson & MacDonald 1978, Cross 1978).

We shall now turn to the concept of the independent and autonomous learner, since it features frequently in the debate on the flexibility of distance education. Writing about distance education, Holmberg (1980) says it ".... is an instrument for individualized study and has aspirations to favour independent study and cater for the autonomous learner. It is based on pre-produced courses and organized non-contiguous two-way communication between students and a supporting organization" (ibid. p.116). "Apparently many adults prefer distance study to other forms because they feel it makes them more independent" (ibid. p.110).

Holmberg bases his argument on a theory put forward by Moore (1972, 1973, 1975, see also Wedemeyer 1976, 1978) on independent learning and teaching. According to Moore, independent learning and teaching comprise an educational system in which the learner is autonomous and separated from his teacher by space and time, so that communication is by print, electronic means, or some other non-human medium, and the autonomous student is described as a person who knows how to proceed through each of the learning events.

The hypothesis that the majority of distance students are autonomous, and for this reason choose this particular form of education, is not supported by the investigations which have been carried out. On the contrary, it often proves that practical reasons have driven the student to choose this form of education. Our evaluation also clearly shows that most of our students had no choice, either since no other form of education was available in the place where they lived, or since it was impossible for them to participate in any other form of education for family or occupational reasons.

Our data shows that distance students at the university do not constitute a special group amongst adult students at the university. The hypothesis that distance students are autonomous learners who know how to proceed through a series of learning events could have a detrimental effect in practice. The planner and the teacher could be led to fail to consider adequately students' needs and capabilities. O'Donnell & Daniel (1979) have also pointed out that the first myth about the adult student which must be dispelled is "that adults neither want nor need help in setting goals, planning programs, defining objectives or sharpening learning skills. Experience, the great teacher, will ensure these steps occur" (ibid. p.6, see also Daniel & Shale 1979). Houle (1964) expressed similar thoughts in relation to the problem of drop-out, namely that many adults do not know how to learn and therefore need much help at the beginning of their studies.

Many investigations show that students who choose distance education are dependent on being able to be flexible in their studies (Zelan & Gardner 1975, De Goede & Hoksbergen 1978, McIntosh 1978, McIntosh & Woodley 1978, Fenster 1979, Hall & Palola 1979, Kaye & Rumble 1979).

Here we see two clearly opposing views on distance education and the nature of distance education. One standpoint views the student as an independent or autonomous learner who chooses this form of education because of specific individual characteristics and, because of these characteristics, has every chance of succeeding with distance studies. The other standpoint represents an interactionist model.

Let us first take a look at the hypothesis that the distance student is an independent learner. This hypothesis can be split up into at least two important parts. Firstly, the model would appear to attribute everything to psychological factors within the individual. Factors in the environment do not seem to have any significant effect. Secondly, it would appear to assume that people can be divided into clearly defined groups according to personal characteristics. It is many years since this view was discarded by the behavioural sciences (cf. Ekman 1952). I therefore strongly question the view that the distance student can generally be characterized as an independent or autonomous learner. The hypothesis appears to rest on relatively shaky foundations and one may ask what empirical evidence there is for its validity.

In the interactionist model, the individual is seen in a wider context, the explanations for study behaviour being sought both in the individual and in the environment. This has been the starting point of the Swedish evaluation and it is supported by the theoretical model used in the area of school research. This model is based on the interaction between goals, student capabilities, environmental and frame factors, the educational process and results. Thus I have sought to discover factors in the individual, in the environment and in society which can explain our results. I have also observed that environmental and frame factors are of the utmost importance for students' choice of education and also for the actual study process. Similar results have been reported from other studies from different areas of education.

In Figure 5, I have attempted to summarize the factors which influence the individual's decision regarding his educational situation. The factors have been divided into three groups relating to the individual, the organization of education, and society. A combination of factors will determine firstly

whether the individual participates in education or not and secondly, the type of education he chooses. The factors presented in the figure are not ranked in any order of importance. The individual factors can vary in importance for different people, or for the same person at different times. A single factor can either hinder or encourage a choice of education. The various educational forms within, for example, the university, can suit different people at different times. A distance course may be the only possible alternative for a woman with small children to look after, whereas later in life the same woman may prefer another form of education. Entrance requirements can force a person to start a different programme of education from the desired one, or to postpone studies for a while. It is also possible that a person has decided on a certain programme of education, but other factors make it impossible; for example, the particular course may not be available in the area, or may be organized in such a way that it is impossible for the person in question to participate. Perhaps further education is necessary for a person's work but his current life-situation makes it impossible for him to participate at that particular time (cf. Benseman 1980).

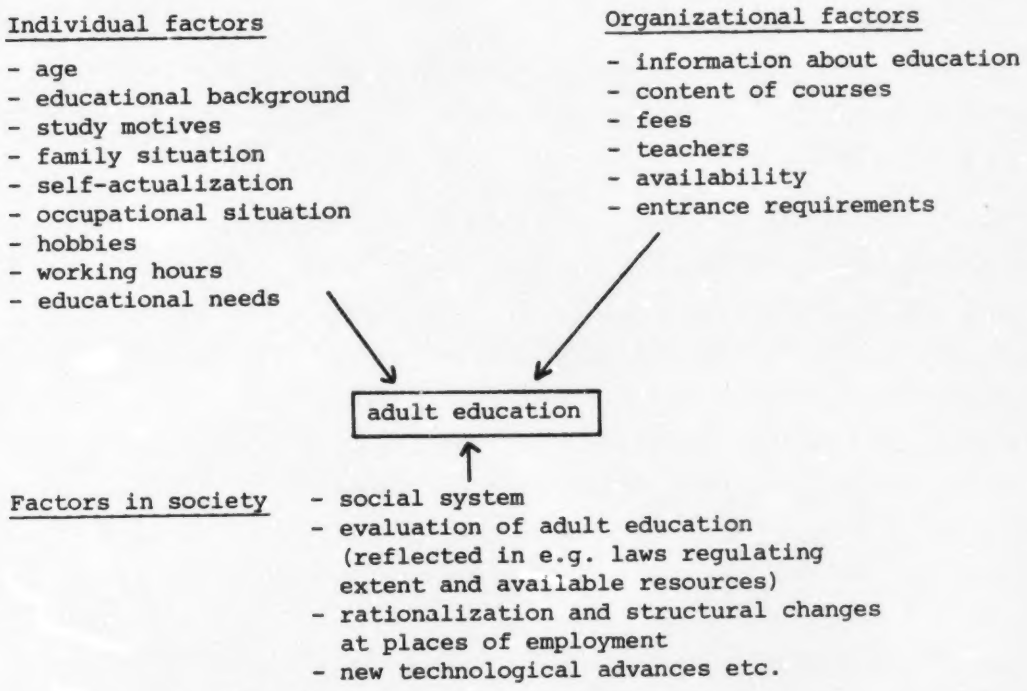


Figure 5. Some factors influencing the choice of educational alternatives for adults. Source: Willén 1981, p.241, Figure 14.1.

In the following discussion, I shall concentrate on the students and try to discover how distance education provision can be planned in order to suit their needs (see Lampikoski 1975, Lampikoski & Mantere 1975, 1976). I shall base the discussion on the results of my own evaluation of distance education at the Swedish universities. The general impression was that distance education had functioned well and that the students were satisfied with their studies. However, we cannot rely on such general statements, and on further analysis of the responses we find that there are naturally a number of weaknesses and omissions in the model. The greatest problem seems to lie in the feedback aspect, i.e. the need for improved contact between teacher and student when interpreting, analysing and discussing the content of the course (cf. Open University 1979b, Rowntree 1976, Spencer 1980, Coldeway 1980, Peruniak 1980). It might help if the structure of the material was edited further, but we know from our evaluation that there is a considerable variation in different students' ability to cope with the material (see e.g. Marton & Willén 1972). Therefore, different students need different structures and different supportive measures. These measures must be established quickly.

Problems also arise at completely different points in time, as the student's opportunities to study are limited by other activities concerning, for example, work and the family (cf. Cain 1979). Kelly (1981b) has found the same demand for contact among students at the Open University. "Some students want more explanation of the units whilst others want to go beyond the written texts; some want more group tutorials but others desire one to one contact; some want the tutor to give a lecture but others would prefer greater discussion and some want to cover general problem areas whereas others want a chance to sort out individual study difficulties. This kind of pattern is common and does not point to a failure of planning but to the inherent diversity of student needs which any system attempting to make effective use of limited resources must somehow try to accommodate" (ibid. p.4)

There is therefore a need for individualisation of teaching which I would like to make it clear cannot be met by radio and TV programmes, however excellent they may be (cf. Bates & Pugh 1975, Bates & Gallagher 1976). As our students pointed out, the problem with radio and TV is their lack of the flexibility which is one of the cornerstones of distance education (cf. Hines 1979, Taylor 1979). At the beginning of the 1970s the general opinion was that broadcasting media were the key to the successful distance

teaching of large groups of students (Hawkridge 1973, Holmberg 1973). In Sweden, this was illustrated by the report of the TRU Committee (SOU 1975: 72), where various international systems were described, and those using broadcasting media were preferred to those not making use of such media. During this period, broadcasting media were even considered to represent a possible means of increasing the effectiveness of other forms of education (see e.g. Chu & Schramm 1967, Campeau 1973). There is thus a connection between this belief in broadcasting media and the establishment of the large distance systems of which these media are a vital component. Already towards the end of the 1970s, more and more people were beginning to discover that the broadcasting media were not the answer to everything. As Erdos (1978) expressed it: "In the past, developments in distance education made possible by advances in technology, or introduced by innovative teaching methods, have usually been hailed with enthusiastic claims for effectiveness greater than that of the early correspondence courses dependent entirely upon the written word. Now studies have shown that correspondence courses supported by radio programmes have not always been significantly more effective than correspondence courses without radio support, and the cost is much greater" (ibid. p.31)

It is, however, important to differentiate between different types of courses in terms of their aims and content. One must differentiate between courses on a lower educational level and with more general content, and courses at university level. Sparkes (1979) points out that radio and TV cannot provide a feedback path for problem identification. The use of broadcasting media is very expensive for distance teaching organizations, a factor which will probably result in a decline in interest. With the advent of further technological changes, radio and TV will probably be replaced by other, less expensive, media such as the videodisc (Daniel & Shale 1979, Bates 1982).

In the decentralized Swedish model, contact between student and teacher is central. Meetings at the university and the use of the telephone have been the main methods of establishing contact. This is also the most common method in Australia (Debham 1976, Mitchell 1975, 1978, Laverty 1980). The conclusion is that effective personal counselling plays a central part in the study situation (cf. also Northedge 1975, Simpson 1977, Sharma 1978, Bartels 1982), an opinion which is supported by the results of the evaluation of distance education in Sweden.

I will now compare the Swedish decentralized model with the Open University system. In Figure 6, Sparkes (1979) describes the Open University in terms of the educational process as a feedback system. The emphasis is placed on the teaching process rather than on the learning process. We see that the process starts with a primary forward path from the teacher to the students - text, TV and so on. The students follow up with feedback to the teacher in the form of questions, exercises, tests, etc. Sparkes continues, "The loop comprising 'individual problem identification' and 'remedial tuition' is simply an error-correcting, negative-feedback loop, centred round students' individual difficulties. In practise it comprises tutorials, tutor comments on written work, further reading, discussions with fellow students, telephone tutorials, computer aided instruction, etc." (ibid. p.5). The wider feedback loop in the diagram gives statistical data which may influence the primary path. Sparkes points out that different types of knowledge need different means of communcation.

The system illustrates that many people share in the vital feedback process. Feedback from students is communicated in a variety of ways within the system (cf. also Ryan 1982). The feedback process in Swedish distance education is much simpler than that in the Open University since responsibility is not divided in the same way. In Sweden, the teacher undertakes all of the roles indicated in the system. Teachers themselves produce the necessary support material and are also responsible for the organization and implementation of teaching. Feedback from students in principle is to the individual teacher. One of the essential differences between these two systems is that problems arising in the educational process in Sweden, whether in relation to a group of students or to an individual, can be quickly solved. Bates (1974) took up the problem in connection with the Open University and pointed out that the tutor, by virtue of having contact with the students, is the most suitable person to provide others in the organization with feedback, and that the need for evaluation stems basically from the separation of students from the course team (ibid. p.35). One disadvantage of the Swedish model is that the teacher works on his own with the course and so control over the process is not shared. There is also a risk in the Swedish system that a long time may elapse before weaknesses in the contributions of individual teachers are discovered. On the other hand, the Swedish distance teacher has the advantage of also working with other education forms, which should provide a certain perspective and a yardstick for setting standards for students studying the same subject but through different study forms (see Karow 1979, Skår 1975).

In the current literature a number of methods have been suggested to strengthen contacts between the distance teaching institution's teachers and students, in order to achieve quantitatively and qualitatively better study results. At Athabasca University there have been several experimental activities designed to find ways of improving the teaching system (see Coldeway 1980a, b, c, Coldeway, MacRury & Spencer 1980, Coldeway, Spencer & Stringer 1980, Crawford 1981, Spencer, Peruniak & Coldeway 1980). There are, however, relatively few investigations of students' reactions to different methods used in distance education. One such survey was carried out at the French Centre de Télé-Enseignement Universitaire (CTEU). (Here 'télé' stands for distance and not for television.) In this survey students were asked to rate different study media from 1 to 5, where 5 denotes the maximum value. Written material and sessions of controlled work at the unversity were rated most highly whereas radio and TV programmes received low ratings. Figure 7 shows the results obtained from a comparison of the actual use made of individual course components with the stated preferences of students.

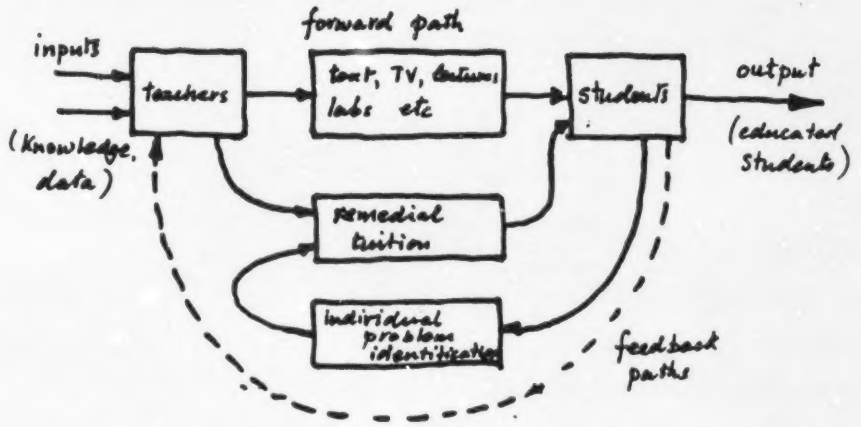


Figure 6 Education represented as a feedback process (Sparkes 1979, p.4)

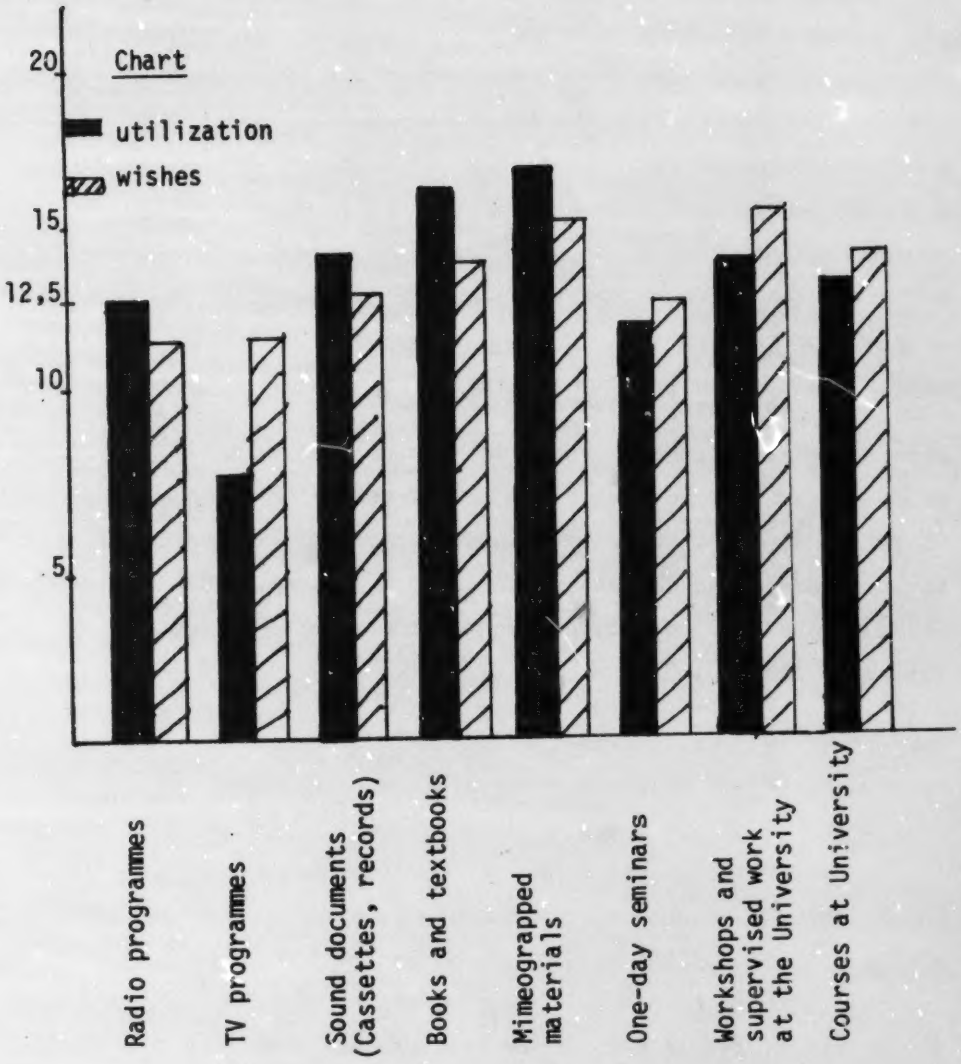


Figure 7. Comparison between the effective utilization of pedagogical components and students wishes. Source: Lefranc 1979, p.9.

Seven hundred and thirty-five students were investigated. For us the results are interesting since they support our own. Lefranc (1979) poses the following question on the basis of these results: "Can we come to the conclusion that the students that request sound documents, one-day seminars, radio and TV programmes, do so only as a compensation for the lack of something better, because they cannot have the advantages of the traditional education of their dreams?" (ibid. p. 10). Lefranc does not think that this conclusion is entirely correct and says finally : "In fact we can affirm that students want a more harmonious equilibrium between the pedagogical components without any predominance of any particular one" (ibid. p.11, see also Daniel & Marquis 1979 and Lefranc 1982).

O'Donnell and Daniel (1979) point out that in distance education we must remember that "further success depends on promoting the development of students' ability to plan their lives, careers and education, set realistic goals and study effectively" (ibid. p.1). It is wrong to beleive that all adult students can do this. The authors suggest individual study plans based on students' own career, educational and personal characteristics (cf. also Thorpe 1979).

Hawkridge (1978) states that research is changing its character at the Open University. Previously the objects of research were tutors and counsellors, but now the aim is to discover "ways in which students learn in the Open University and how the tuition and counselling system can help them" (ibid. p.32, see also Marton 1979, Marton & Svenson 1982, Morgan & Taylor 1982). Säljö (1982) argues in the following way: "If research is to contribute to an understanding of how people learn it is important that its driving-force is not simply that of 'efficiency', i.e. a search for insights into the conditions under which people can be shown to learn effectively. We also need to develop insights into what it means to learn and be more sensitive to what counts as learning within certain cultural boundaries" (ibid. p.195).

It is quite clear that distance education is moving away from advanced and costly technical aids, which at the beginning of the 1970s many though would increase the effectiveness of teaching. Interest tends more and more to focus on students' chances of succeeding with their studies and on the interaction between student and teacher. In this context the evaluation of distance education in the Swedish universities is particularly relevant, especially since it attempts to present a comprehensive picture. The broad spectrum covered by the evaluation and by the follow-up investigation several

years later provides valuable information for the planning and implementing of distance education. A systematic network of information derived from the evaluation, in common with the conclusions of various other studies, suggests that the feedback aspect is a weak link in the distance education system. The conclusion we can draw from this is that however good the teaching material may be, some students are bound to fail in their studies unless we can also guarantee personal contact between the distance teaching institution and the student. This contact gives students security both in their work and in their personal lives. The feedback problem has also been much discussed at the Open University, but a thorough going comparison with the Swedish system is difficult to make on account of the considerable structural differences between the systems.

It is obvious that the decentralized model used in Sweden and Australia has certain advantages which should not be overlooked. The contact - feedback between student and teacher is simple and uncomplicated. This can be seen from the point of view of both teacher and student. Frequently the student has one teacher during the entire period of the course, whom he or she can contact by telephone or during the meetings at the university regarding all types of problems. This is a source of security for the student. For the teacher, who has planned the course and developed special learning materials, contact with the students means that he or she can get direct information about how the course is functioning. In this way, adjustments and changes can be continuously made. Smith (1978), who works in distance education at the University of New England in Australia, says "... we believe strongly that there should be more to a university degree than satifying examiners' requirements. Elusive though the 'true university experience' may be to define, there is no doubt in the minds of our staff and students that without some interactions on a face-to-face basis, off-campus education is the poorer. Both teacher and learner need to feel commitment to their respective tasks to do them best. Such commitment is difficult to engender without opportunities for staff and students to meet on a regular basis" (ibid. p.79 and see also Smith 1982). When the Swedish model was launched Holmberg (1974), among others, feared that it would mean a lowering of pedagogical standards. "Consistently decentralized correspondence education also risks a lowering of the pedagogical standards. This is related, among other things, to the fact that the teaching aid situation at the 19 independent institutes of higher education will probably be less uniform than at the present time. Course material, specific for correspondence education (student study guides, tasks for submission, etc.) would be produced in essentially small editions, resulting in higher costs and perhaps even poorer quality. All production

of teaching aids demands professional editing, illustration and technical production. To spread this work among many different instances, as well as negotiations about the right to use pictures and text material from, e.g. foreign sources, does not seem rational. University departments are hardly the right adminstrative bodies for the technically specialized job of producing self-instructional study material" (ibid. p.3).

Our evaluation has shown that such fears were and are completely unfounded. On the contrary, the decentralized model has implied a pedagogical revival for many of the participating departments. Holmberg had probably forgotten that the decentralized model used in Sweden uses the same course materials as the regular courses. Another important point in this connection is that students have the opportunity to choose different study forms at the university at different points in time, and indeed they do so. This makes it even more important that our distance courses should be identical in terms of content and pass requirements to the courses taken by full-time on-campus students (cf. White 1975, McIntosh & Rigg 1979, Pritchard 1980, Guiton 1981). I can also report that the number of courses offered at the university has increased from ten or so to almost 250 during the last few years. The decentralized model provides a framework within which there are excellent possibilities of individualising and differentiating education.

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